CLAIMS:

1. A method for inactivating and/or inhibiting ribonucleases that may be present in a composition comprising:

(a) obtaining a composition;

(b) obtaining a reducing agent;

(c) admixing the composition and the reducing agent; and

(d) heating the admixture;

wherein any ribonucleases in the composition are substantially inactivated or inhibited.

2. The method of claim 1, wherein said composition is a reagent used in molecular biology.

3. The method of claim 2, wherein the molecular biology reagent is one employed in the handling of RNA including water, TE buffer, 20X SSC, 10X MOPS, Tris buffer, EDTA, nucleic acid hybridization buffer, sodium acetate buffer, formalin tissue fixative, *in situ* hybridization buffer, or nucleic acid storage buffer/composition.

4. The method of claim 1, wherein the said reducing agent is DTT, β-mercaptoethanol, cysteine, or dithioerithritol.

5. The method of claim 1, wherein the reducing agent is DTT.

6. The method of claim 1, wherein said the final concentration of the DTT is between 1 and 200 mM in the admixture.

7. The method of claim 6, wherein the final concentration of DTT is 20 mM in the admixture.

8. The method of claim 1, wherein said reducing agent is β-mercaptoethanol.

9. The method of claim 1, wherein the final concentration of β-mercaptoethanol is between 1 and 200 mM in the admixture.

10. The method of claim 1, wherein said reducing agent is cysteine.

11. The method of claim 1, wherein the final concentration of cysteine is between 1 and 200 mM in the admixture.

12. The method of claim 1, wherein the reducing agent is comprised in a buffer composition prior to admixing.

13. The method of claim 12, wherein the buffer composition comprises a chelator.

14. The method of claim 13, wherein the chelator is sodium citrate, EGTA, or EDTA.

15. The method of claim 1, wherein the admixture is heated to at least 37°C.

16. The method of claim 1, wherein the admixture is heated for at least 3 minutes.

17. The method of claim 1, wherein said composition comprises a crude cellular extract.

18. A method for inactivating and/or inhibiting ribonucleases that may be in the presence of RNA comprising:

(a) obtaining a composition comprising RNA;

(b) obtaining a reducing agent;

(c) admixing the composition and the reducing agent; and

(d) heating the admixture;

wherein any ribonucleases in the composition are substantially inactivated or inhibited.

19. The method of claim 18, wherein said the composition is comprised of purified RNA.

20. The method of claim 18, wherein said the reducing agent is DTT, β-mercaptoethanol, dithioerithritol, or cysteine.

21. The method of claim 18, wherein said the final concentration of the reducing agent is between 1 and 200 mM in the admixture.

22. The method of claim 18, wherein the reducing agent is comprised in a buffer composition prior to admixing.

23. The method of claim 18, wherein the admixture is heated to at least 37°C.

24. The method of claim 18, wherein the admixture is heated for at least 3 minutes.

25. A method for sequential inactivation and/or inhibition of any ribonucleases in a composition such that any ribonucleases introduced to the composition at some time after a first inactivation procedure may be inactivated comprising:

a) obtaining a composition;
b) obtaining a reducing agent;
c) admixing the composition and the reducing agent;
d) performing a first heating of the admixture, whereby any ribonucleases in the admixture are inactivated or inhibited;
e) determining that a further inactivation procedure is warranted to inactivate or inhibit any ribonucleases that may have been introduced to the composition subsequent to the first heating;
f) performing a second heating of the admixture, whereby ribonucleases in the admixture are inactivated and/or inhibited.

26. The method of claim 25, wherein the reducing agent is DTT, dithioerithritol, β-mercaptoethanol, or cysteine.

27. The method of 23, wherein said the concentration of the reducing agent is between 1 and 200 mM.

28. A solution for storing RNA comprising

a) a reducing agent; and
b) RNA.

29. The solution of claim 28, wherein the reducing agent is DTT, dithioerithritol, β-mercaptoethanol, or cysteine.

30. The solution of claim 28, wherein the concentration of the reducing agent is between 1 and 200 mM.

31. The solution of claim 28, further comprising a buffer.

32. The solution of claim 28, wherein the pH of the composition is 5.0-7.0.

33. The solution of claim 28, comprising a chelator.

34. A method for producing cDNA from a cell sample comprising:

(a) obtaining a cell sample extract ;

(b) obtaining a reducing agent;

(c) admixing the cell sample and the reducing agent;

(d) heating the admixture, wherein any ribonucleases in the admixture are inhibited;

(e) incubating the admixture with reverse transcriptase under conditions to allow reverse transcription; and

(f) amplifying the products of the reverse transcription.

35. The method of claim 34, further comprising incubating said admixture with a deoxyribonuclease prior to the reverse transcription reaction.

36. The method of claim 34, wherein the said reducing agent is DTT, β-mercaptoethanol, cysteine, or dithioerithritol.

37. The method of claim 34, wherein the reducing agent is DTT.

38. The method of claim 34, wherein said the final concentration of the DTT is between 1 and 200 mM in the admixture.

39. The method of claim 34, wherein the admixture is heated to at least 37°C.

40. The method of claim 34, wherein the admixture is heated for at least 3 minutes.

41. A kit for producing cDNA from cells, comprising, in a suitable container:
(a) a buffer; and
(b) a reducing agent.

42. The kit of claim 41, further comprising:
(c) a reverse transcription buffer
(d) a reverse transcriptase;
(e) a dNTP mix.

43. The kit of claim 41, further comprising a deoxyribonuclease.

44. The kit of claim 41, wherein said reducing agent is DTT.

45. The kit of claim 41, further comprising an RNase inhibitor.

46. The kit of claim 41, further comprising Lambda ARMORED RNA®.

47. A kit for producing cDNA from cells comprising, in a suitable container:
(a) a cell lysis buffer comprised of a reducing agent and a buffer;
(b) a deoxyribonuclease;
(c) an RNase inhibitor;
(d) a reverse transcription buffer;
(e) reverse transcriptase;
(f) dNTPs; and
(g) Lambda ARMORED RNA®.

48. A method for inhibiting ribonucleases in a cell sample comprising:
obtaining a cell sample;
obtaining a reducing agent;

admixing the cell sample and the reducing agent, and

heating the admixture;

wherein any ribonucleases in the cell sample are substantially inactivated.

49. A method for inhibiting the activity of ribonucleases that may be present in a composition comprising:

(a) obtaining a composition;

(b) obtaining a reducing agent;

(c) admixing the composition and the reducing agent; and

(d) heating the admixture;

wherein activity of any ribonucleases in the composition is inhibited.

50. The method of claim 49, wherein the said reducing agent is DTT, β-mercaptoethanol, cysteine, or dithioerithritol.

51. The method of claim 49, wherein the reducing agent is DTT.

52. The method of claim 51, wherein said the final concentration of the DTT is between 1 and 200 mM in the admixture.

53. The method of claim 49, wherein the admixture is heated to at least 37°C.